

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Revision of Part 15 of the Commission's)	ET Docket No. 98-153
Rules Regarding Ultra-Wideband)	
Transmission Systems)	
)	

To: The Commission

EX PARTE SUBMISSION OF MS SEDCO

MS Sedco is hereby submitting this *ex parte*¹ information in response to the Further Notice of Proposed Rulemaking (“FNPRM”) issued by the Federal Communications Commission (“FCC” or “Commission”) addressing proposed rule changes to Part 15 of the FCC’s rules governing the operation of Ultra-Wideband (“UWB”) devices.² As discussed in more detail below, MS Sedco believes that minor changes to the FCC’s proposed rules will facilitate innovation in the UWB industry, and allow MS Sedco and others the technical flexibility to develop a range of new products that will benefit consumers and the public at large.

I. Background

MS Sedco was founded over 30 years ago to design and manufacture state-of-the-art motion and presence sensors and electromechanical switches. MS Sedco has focused on two

¹ 47 C.F.R. § 1.1206.

² *In re Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems*, ET Docket No. 98-153, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, FCC 03-33 (Mar. 12 2003) (“FNPRM”).

product lines: automatic door control sensors and switches and traffic and pedestrian control sensors and switches.

MS Sedco has followed the evolution of the FCC's UWB standard, and applauds the Commission's promotion of this innovative technology. MS Sedco is currently developing a number of outdoor UWB devices for traffic management and control, which it believes may operate efficiently and effectively under the FCC's proposed UWB rules, with minor modifications suggested herein. These devices would be mounted to a pole or traffic signal, and would employ low-pulse frequency repetition for long range vehicle detection. MS Sedco believes that these devices hold great promise for the effective management of traffic patterns, and may be employed by municipalities and others entities to reduce gridlock and enhance road safety. In order to maximize the device's effectiveness and to increase the range of design options available to manufacturers, however, MS Sedco suggests that the FCC broaden its proposed rule changes to permit more flexible and innovative designs by manufacturers seeking to deploy novel UWB devices. MS Sedco believes the minor changes suggested herein would offer considerable advantages and design flexibility to UWB manufacturers, enabling a greater range of beneficial products to the public.

II. The FCC Should Expand the Operational Parameters Proposed in the FNPRM

In the FNPRM, the Commission proposed to permit the operation of any UWB devices under the current UWB standards for hand held devices, so long as the Pulse Repetition Frequency ("PRF") does not exceed 200 kHz and the equipment employs a pulsed or impulse modulation.³ The FCC has requested comment on this proposal in the FNPRM, asking whether different PRF limits should be employed, or whether other changes to this suggestion would be

³ FNPRM at ¶ 155.

appropriate for outdoor devices, including changes to emission limits. As described below, MS Sedco suggests that the PRF should be increased to 20 MHz, and that the radiated power limit similarly be increased to -11 dBm for outdoor devices.

A. The FCC Should Increase the Proposed PRF Limit

MS Sedco recommends that the FCC raise the suggested 200 kHz PRF limit to permit operations at 20 MHz PRF. In this regard, MS Sedco notes that the current Part 15 rules do not appear to specifically address PRF, except when addressing measurement detection functions in Section 15.37, and do not indicate its precise definition. PRF, therefore should be more clearly defined if it is to be used as a defining operational parameter for low pulse UWB devices. MS Sedco makes its recommendation to increase PRF to 20 MHz, therefore, based on its concept of PRF on the following example: a device producing a data burst of “x” bits sent at a rate of 1 MHz and updated every one second would have a PRF of 1 MHz.

With this in mind, an increase in the PRF to 20 MHz would facilitate the product development of MS Sedco and other UWB device manufacturers. Current rules provide that UWB devices are compliant so long as the UWB power requirement is met while using “a spectrum analyzer with a resolution bandwidth of 1MHz , an RMS detector, and a 1 millisecond or less averaging time.” With these parameters available as guidance, MS Sedco designed a system which uses a 20 MHz PRF. The frequency was chosen in part because of the ease of modulation, manipulation of the return signal for correlation purposes and availability of "off the shelf" components. Additionally, future expansion of the device for improved features would be more readily obtainable with this higher PRF. Accordingly, MS Sedco believes that the provision of a higher PRF as described herein would benefit the UWB industry and increase UWB device functionality.

If, however, the FCC intends to define PRF in accordance with the usage employed by the National Telecommunications and Information Administration (NTIA) in its March 9, 2001 report in this docket,⁴ MS Sedco concurs with the suggested PRF of 200 kHz, so long as there are no restrictions imposed with respect to percent gating or percent of dither.

B. The FCC Should Increase the Radiated Power Limit

MS Sedco also recommends that the FCC increase the radiated power limit, particularly for outdoor devices, to -11.3 dBm. This change would allow manufacturers of UWB devices, such as those currently under development by MS Sedco, considerable additional flexibility in their design parameters, which would be particularly beneficial for outdoor devices. For example, MS Sedco believes that there may be circumstances in which a higher power level will help ensure that a UWB product will operate without errors, such as when an outdoor device is installed at a site where the equipment must be housed in an enclosure to prevent vandalism or for other security reasons. Where the added attenuation of the enclosure could cause a UWB device to become non-operational or intermittent, an increase in the radiated power limit to -11.3 dbm would provide a sufficient operational margin for UWB manufacturers to overcome these circumstances and ensure the functionality of their outdoor UWB products.

C. The FCC Should Clarify That Certain Elements of the Rule for Hand Held Devices Would Not Apply

In the FNPRM, the FCC proposes to allow the operation of any UWB devices that meet the current standards for UWB hand held devices, so long as certain PRF is maintained and pulsed or impulse modulation is maintained. The current UWB rule for hand held devices (46

⁴ See, e.g., Assessment of Compatibility Between Ultra Wideband (UWB) Systems and Global Positioning System (GPS) Receivers, ET Docket No. 98-153, at vi (filed Mar. 9, 2001) (defining PRF as the number of pulses transmitted per unit time (one second)).

C.F.R. § 15.519), however, contains a number of restrictions that the FCC should clarify would *not* apply to these operations. Specifically, the FCC should clarify that:

1. Devices need not be hand held;
2. The prohibition on the use of antennas mounted on outdoor structures, *e.g.*, antennas mounted on the outside of a building or on a telephone pole, or any fixed outdoor infrastructure, does not apply; and
3. The “transmit/receive” restrictions of Section 15.519(a)(1), requiring that the device only transmit only when it is sending information to an associated receiver and requiring the UWB intentional radiator to cease transmission within 10 seconds, unless it receives an acknowledgement from the associated receiver that its transmission is being received, would be satisfied by a device that a self contained transmitter and receiver that continuously receives the transmitter’s signal.

Clarifying that these elements of section 15.519 do not apply to devices adhering to the adopted PRF and employing pulsed or impulse modulation will aid in ensuring regulatory certainty for manufacturers, and speed availability of innovative technology to the public. Accordingly, MS Sedco respectfully requests that the Commission consider clarifying the precise elements of Section 15.519 that will apply to proposed devices, and those that will not.

III. Conclusion

For the foregoing reasons, MS Sedco respectfully requests the Commission consider this information, and proceed in a manner consistent with the views expressed herein.

Respectfully submitted:

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Dated: May 5, 2004